

The Sacramento District Review

4 Lost Lodge Rd, Cloudcroft, NM 88317

575-682-2551

Wood Used to Make Musical Instruments



Piano soundboard made from spruce

- Kathy Wallace

Production of timber for forest products is one of the many multiple uses that the Forest Service provides. One use that doesn't immediately come to mind is the wood that is used in the traditional construction of musical instruments. Although many of the tree species used to make these instruments are in other areas throughout the United States and/or Canada, the Sacramento Ranger District is home to a very important one - spruce.

Piano

A piano may be the most technically complex musical instru-

ment, with 12,000 specific parts in a typical piano. A piano's outside cabinetry is known as the case and is the piano's most visible feature. It is made of multiple laminations of hard rock maple (*Acer saccharum*; common name: sugar maple).

Strong beams or braces traditionally made of spruce in the bottom of a grand piano or in the back of an upright piano provide additional support.

White spruce, Engelmann spruce and Sitka spruce are utilized for soundboard construction, but the preferred species is Sitka spruce.

Spruce and Sitka spruce in particular, has a high strength-to-weight ratio and the growth rings generally have a wider early-wood zone compared to the latewood zone. Its evenness and uniformity of grain enable the sound waves to travel unimpeded.

Ribs, made of spruce or sugar pine, are placed on the underside of the soundboard in order to maintain the crown, distribute tone along the soundboard and provide strength. Soundboard bridges are glued to the top side of the soundboard to transmit the vibrations from the strings to the soundboard and are made of either solid or laminated maple. The strings are attached to tuning pins which are in turn inserted into a pinblock, which is made of laminated maple.

The action, which consists of many parts including hammers and dampers, are traditionally made of maple.



"Frosty days and ice-still nights,
Fir trees trimmed with tiny lights,
Sound of sleigh bells in the snow,
That was Christmas long ago.

Tykes on sleds and shouts of glee,
Icy-window filigree,
Sugarplums and candle glow,
Part of Christmas long ago.

Footsteps stealthy on the stair,
Sweet-voiced carols in the air,
Stocking hanging in a row,
Tell of Christmas long ago.

Starry nights so still and blue,
Good friends calling out to you,
Life, so fact, will always slow...
For dreams of Christmas long ago."

- Jo Geis, *Christmas Long Ago*



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Wood Used to Make Musical Instruments Cont...



Guitar top made from Engelmann Spruce

The keys are usually made of spruce and have a polymer coating.

Violin

The primary woods used in violin making are spruce and maple. Spruce (Sitka or European) is used for the top, which functions as a soundboard. The back, sides (known as ribs), neck and scroll are maple. There are many species of maple which are suitable for violins. The criteria for selection include the straightness of grain, the specific gravity and the figure of the wood, all which contribute to the tonal and visual charac-

teristics of the instrument.

Spruce or willow is used internally for blocks and linings. The bass bar and sound post are spruce. The fingerboard is made of ebony, the bridge is maple, and other fittings, such as the pegs, tailpiece and chin rest are ebony, rosewood or boxwood. The bow is traditionally made from pernambuco (*Caesalpinia echinata* or *Guilandina echinata*) which comes from Brazil.

Guitar

An assortment of different wood types are used in guitar construc-

tion. The different types of wood used for particular applications are chosen mainly for their physical properties but also for visual qualities.

The backs and sides of an acoustic classical guitar is traditionally rosewood, but mahogany, maple or other hardwoods have been used. The guitar neck is usually made of mahogany and fingerboards are usually made of ebony or rosewood.

The top of the guitar functions as the soundboard and traditionally is made of spruce (Sitka, Engelmann or red). Linings can be mahogany, but basswood has also been used.

The bindings and purflings are an aesthetic choice and only need wood that is not porous and can be easily bent.

Christmas Tree Sales

Lincoln National Forest is now selling Christmas Tree Permits for five dollars each available at all District Office's and at the Supervisor's Office in Alamogordo. Permits will be available at these locations only and cannot be obtained through various retailers like previous years.

The Sacramento Ranger District office will be open on Saturday, November 19th and Saturday, December 10th from 9a.m. - 2:30p.m. to sell Christmas tree permits.

Additionally, mail-in applications for permits are available on-line at: www.fs.usda.gov/lincoln and at various retailers in New Mexico and Texas.

Office Hours

The Sacramento Ranger District Office is located in the Village of Cloudcroft, at 4 Lost Lodge Road, one mile south of Highway 82 on Highway 130. We are open Monday - Friday 7:30 a.m. to 4:30 p.m. Closed Saturdays, Sundays and Federal Holidays.

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Bark Beetles



Western Bark Beetles boring holes in a pine tree

- Kathy Wallace

Bark beetles are active on lands of all ownership in the western states. The genera most commonly found on the Lincoln National Forest are *Dendrotonus*, *Ips* and *Scolytus*. These genera of bark beetles are native to the forest and generally attack trees that are weakened by disease, damage, drought or that are generally less healthy. However, when environmental conditions are right, the population of bark beetles can grow to epidemic proportion and also attack healthy, vigorous trees.

Bark beetles are very small (no larger than 1/3 inch) and spend most of their lives beneath the bark of a

tree. The female beetle excavates an egg gallery and lays eggs along the sides of the gallery. Once the eggs hatch, the larvae bore tunnels through the phloem which radiate outwardly, creating a lacey pattern on the inner bark. The larvae pupate and then emerge as adults. The adult beetle only spends a few days outside the bark, flying to locate a new host tree to attack.

When adult beetles enter the tree, they frequently introduce a blue stain fungus into the tree. The combined activity of the tunneling, which in effect girdles the tree, and the blue stain fungus

which blocks the xylem, eventually kills the tree.

Signs of a successful beetle attack on a tree are reddish pitch tubes (resin mixed with the boring dust or frass) on the tree trunk and reddish boring dust at the base and also in the bark crevices of the tree. The ultimate sign of a successful attack is discolored foliage (yellow or rust), called a "fader". Unsuccessful beetle attacks are identified by large white pitch tubes on the tree trunk, which means the tree has successfully "pitched out" the beetles. Each species of bark beetle can be identified by a unique gallery pattern found on the inside of the bark or on the wood of the tree.

Western Bark Beetle Galleries



Enjoying Your Public Lands?

The Sacramento Ranger District invites you to share your forest experiences. Whether it's hiking, camping, OHV riding or hunting, the district would like to hear from you! Please bring in or mail us your pictures and/or letters to be posted on our new Visitor Viewpoints Board located just inside our lobby. Please mail your pictures or letters to: Sacramento Ranger District, P.O. Box 288, Cloudcroft, NM 88317.



Think Snow!

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The Ranger's Report



James Duran
Sacramento District Ranger

It's time to get out in the cold and enjoy winter in the woods! Many Americans venture out into the woods with family and friends to cut down their annual Christmas tree. Is this a tradition your familiar with? For people living in communities like Lubbock, El Paso and Las Cruces, this venture may be one of the few annual trips to the Lincoln National Forest to cut down a tree on their public lands. Many of you within the local area have the good fortune of visiting more often and some of you may even make special "scouting" trips to find

that perfect tree to take home. Many citizens are enjoying a warm fire in the fireplace this season from fuelwood harvested off the Sacramento Ranger District. And if you're really lucky, like many New Mexicans, you might have some carne seca (jerky) and a stash of piñon nuts in your pocket to eat as you wander through the Forest. Many of the seasonal enjoyments that I've described are products of your National Forest system lands.

On several occasions I have been asked "Can I cut down a tree or remove other forest products from the National Forest?" I will hopefully put this question to rest by publicly notifying you that you can do it with a permit. If your tree has been artificial like many others, the opportunity to return to the old fashion "real" tree is here. The For-

est Service has a permit system in place that is simply a tool used to manage the amount removed, specific harvest procedures and the pace forest products are removed from the land. With the guiding goal of long term sustainability of these products to the public, the permit system is critical. Forest Service administrative procedures are in place to ensure that the concept of public land management for the "greatest good" is the guiding principle. If you need a permit for fuelwood, a Christmas tree, or any other forest product, stop by and let us provide that service.

Your questions can be submitted and may be answered if you mail your letter to Attention: Ranger, Sacramento Ranger District, PO Box 288, Cloudcroft NM 88317.

Write a letter to the Ranger

If you've ever wondered about timber harvests, endangered species, off-road vehicle use, or other natural resource management topics, this is your opportunity to get your answer.

Individuals aspiring to acquire knowledge about the US Forest Service are encouraged to escape the fast-paced world of technology and write a good old-fashioned letter to the Ranger.

If you would like to write a letter to James Duran, Sacramento District Ranger, please mail it to: P.O. Box 288, Cloudcroft, NM 88317.

